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EXAMINER

ONI, OLUBUSOLA

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Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

1. This action is responsive to communications: Application filed on 06/30/2003

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-37, 40-55 are rejected under 35 U.S.C. 102(e) as being anticipated by Chandrasekaran et al. (Patent No. 6,738,971) herein after "Chandrasekaran"

For claim 1, Chandrasekaran teaches "a logical volume of a file system (Col. 2, line1-5); and a plurality of resource managers maintained on the file system volume ([Col. 1, lines 19-35]), each resource manager independent from one another and having associated transactional metadata and a collection of associated files" (Col. 1, lines 25-35, Col. 4, lines 50-62).

For claim 2, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches "wherein at least one

resource manager comprises properties that differ from properties of another resource manager”(Col.1, lines 25-35, Col. 4, lines 50-62).

For claim 3, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches, “wherein at least one resource manager comprises transactional file system metadata that differ from transactional file system metadata of another resource manager” (Col. 3, lines 23-37, Col. 4, lines 50-67).

For claim 4, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches, “wherein one of the resource managers contains files associated with a first database, and wherein another of the resource managers contains files associated with a second database” (Col. 3, lines 12-26, Col. 4, lines 50-62, Col. 7, lines 15-29).

For claim 5, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches “wherein the file system maintains a volume control data structure associated with a set containing at least one resource manager control data structure”(Col. 3. lines 18-34).

For claim 6, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches “further comprising a

mechanism in the file system for discovering a resource manager control data structure associated with a file data structure"(Col. 3, lines 18-37).

For claim 7, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches "wherein the file system maintains a first data structure having data identifying at least one resource manager control data structure" (Col. 3, lines 12-36, Col. 7, lines 14-29).

For claim 8, this claim is rejected on grounds corresponding to the argument give above for rejected claim 7 above. Chandrasekaran teaches " wherein each file in the collection includes a reference to data maintained in the first data structure to identify a resource manager control data structure for that file"(Col. 3, lines 12-26, Col. 4, lines 50-62, Col. 7, lines 15-29).

For claim 9, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches "an open file object on the volume, wherein the file system maintains a file control data structure corresponding to the open file object, the file control data structure including a reference to a resource manager control data structure that corresponds to a resource manager to which the file is associated" (Col. 3, lines 12-37).

For claim 10, this claim is rejected on grounds corresponding to the argument give above for rejected claim 9 above. Chandrasekaran teaches "wherein the file control data structure includes data that indicates that the open file object comprises the resource manager" (Col. 3, lines 12-36, Col. 7, lines 14-29)

For claim 11 this claim is rejected on grounds corresponding to the argument give above for rejected claim 9 above. Chandrasekaran teaches, "wherein the data is persisted in a record in a file system table, the record corresponding to the file" (Col. 3, lines 12-37).

For claim 12, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches "wherein the file system includes a set of functions for interfacing with the resource manager"(Col.1, lines 25-32).

For claim 13, this claim is rejected on grounds corresponding to the argument give above for rejected claim 12 above. Chandrasekaran teaches "wherein one function creates a new resource manager" (Col. 4, lines 9-14).

For claim 14, this claim is rejected on grounds corresponding to the argument give above for rejected claim 12 above. Chandrasekaran teaches "wherein one function starts a resource manager"(Col. 4, lines 50-56).

For claim 15, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches "wherein each resource manager corresponds to a directory hierarchy, and wherein the collection of associated files comprises files logically under that directory hierarchy" (Col. 7, lines 15-29).

For claim 16, this claim is rejected on grounds corresponding to the argument give above for rejected claim 1 above. Chandrasekaran teaches "wherein associated transactional metadata includes a log file" (Col. 2, lines 48-66).

For claim 17, Chandrasekaran teaches "separating a volume into a plurality of resource managers (Col. 1, lines 19-35), each resource manager associated with transaction metadata (Col. 3, lines 28-37); "receiving a request to open a file system object associated with a resource manager" (Col. 7, lines 19-29); "creating a file control block for the file system object" (Col. 2, lines 6-9, Col. 3, lines 23-26); "determining whether the file control block references a resource manager control block (log 124), and if not, discovering a resource manager control block corresponding to the file system object and associating the file control block with the discovered resource manager control block" (Col. 3, lines 23-37).

For claim 18, this claim is rejected on grounds corresponding to the argument give above for rejected claim 17 above. Chandrasekaran teaches "wherein discovering

the resource manager control block (log 124) includes creating a resource manager control block" (Col. 2, lines 58-60, Col. 3, lines 30-37).

For claim 19, this claim is rejected on grounds corresponding to the argument give above for rejected claim 17 above. Chandrasekaran teaches "wherein associating the file control block with the discovered resource manager control block comprises writing a pointer into the file control block that points to the resource manager control block" (Col. 3, lines 18-37).

For claim 20, this claim is rejected on grounds corresponding to the argument give above for rejected claim 17 above. Chandrasekaran teaches "wherein discovering the resource manager control block includes determining whether the resource manager control block exists, and if not, creating the resource manager control block, and modifying the file control block to include an association with the resource manager control block" (Col. 3, lines 3-35).

For claim 21, this claim is rejected on grounds corresponding to the argument give above for rejected claim 17 above. Chandrasekaran teaches "wherein discovering the resource manager control block includes locating a file control block of a parent file that is associated with the resource manager control block"(Col. 3. lines 18-34).

For claim 22, this claim is rejected on grounds corresponding to the argument give above for rejected claim 17 above. Chandrasekaran teaches "wherein discovering the resource manager control block includes locating a reference to a table location containing resource manager control block data, and using the reference to obtain a pointer to the resource manager control block"(Col. 3, lines 18-37).

For claim 23, this claim is rejected on grounds corresponding to the argument give above for rejected claim 22 above. Chandrasekaran teaches "wherein locating the reference to the table location comprises reading a header of the file object"(Col. 3, lines 12-35).

For claim 24, this claim is rejected on grounds corresponding to the argument give above for rejected claim 22 above. Chandrasekaran teaches "further comprising maintaining a table including the table location in a volume control block" (Col. 3, lines 18-26).

For claim 25, this claim is rejected on grounds corresponding to the argument give above for rejected claim 17 above. Chandrasekaran teaches "wherein each resource manager corresponds to a subdirectory in the file system, and wherein the file system object is logically associated with the subdirectory"(Col. 7, lines 15-29).

For claim 26, this claim is rejected on grounds corresponding to the argument give above for rejected claim 17 above. Chandrasekaran teaches "wherein at least one resource manager is associated with a database, and further comprising, performing a transaction that includes at least one operation by the database and at least one operation by the file system" (Col. 2, lines 1-62, Col. 3, lines 12-26).

For claim 27, is rejected on grounds corresponding to the arguments given above for rejected claim 17 and is similarly rejected.

For claim 28, Chandrasekaran teaches "means for separating a volume into a plurality of units of management" (Col. 1, lines 19-35), "each unit of management associated with transaction metadata" (Col. 3, lines 28-37); and "database means having data maintained in a table and data maintained in a first unit of management on the file system" (Col. 3, lines 23-37), "the first unit of management having at least one property that is different relative to a property on a second unit of management" (Col. 1, lines 25-35, Col. 4, lines 50-62).

For claim 29, this claim is rejected on grounds corresponding to the argument give above for rejected claim 28 above. Chandrasekaran teaches "wherein the transaction metadata of the first unit of management contains a log, and wherein at least one property of the first unit of management corresponds to a size of the log" (Col. 3, lines 30-37).

For claim 30, this claim is rejected on grounds corresponding to the argument give above for rejected claim 28 above. Chandrasekaran teaches "wherein the transaction metadata of the first unit of management contains a log, and wherein at least one property of the first unit of management corresponds to a mode of logging data to the log" (Col.3, lines 30-37).

For claim 30, this claim is rejected on grounds corresponding to the argument give above for rejected claim 28 above. Chandrasekaran teaches "wherein at least one property of the first unit of management corresponds to a log size" (Col.3, lines 30-36).

For claim 31, this claim is rejected on grounds corresponding to the argument give above for rejected claim 28 above. Chandrasekaran teaches "means for creating a unit of management" (Col.4, lines 9-14).

For claim 32, this claim is rejected on grounds corresponding to the argument give above for rejected claim 28 above. Chandrasekaran teaches "means for starting a unit of management" (Col. 4, lines 50-56).

For claim 33, this claim is rejected on grounds corresponding to the argument give above for rejected claim 28 above. Chandrasekaran teaches "means for shutting down a unit of management" (Col. 2, lines 60-63).

For claim 34, Chandrasekaran teaches “separating a file system volume into a plurality of parts (Col. 2, line1-5, Col. 1, lines 19-35); associating at least one of the parts with a first resource manager and at least one other of the parts with a second resource manager (Col. 1, lines 25-35, Col. 4, lines 50-62, Col. 7, lines 15-29) and “providing transactional services via each resource manager” (Col. 3, lines 28-37).

For claim 35, this claim is rejected on grounds corresponding to the argument give above for rejected claim 34 above. Chandrasekaran teaches “wherein separating a file system volume into a plurality of parts comprises collecting a plurality of sets of files” (Col. 2, line1-5)

For claim 36, this claim is rejected on grounds corresponding to the argument give above for rejected claim 35 above. Chandrasekaran teaches “wherein associating at least one of the parts with a first resource manager comprises associating a first set of files with the first resource manager” (Col. 7, lines 15-29).

For claim 37, this claim is rejected on grounds corresponding to the argument give above for rejected claim 36 above. Chandrasekaran teaches “wherein the first resource manager corresponds to a subdirectory on the file system volume, and wherein associating the first set of files with the first resource manager comprises logically storing

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the first set of files in the directory hierarchy rooted at the subdirectory" (Col. 7, lines 15-29).

For claim 40, this claim is rejected on grounds corresponding to the argument give above for rejected claim 34 above. Chandrasekaran teaches "wherein the first resource manager provides transactional services to a database" (Col. 7, lines 15-29).

For claim 41, this claim is rejected on grounds corresponding to the argument give above for rejected claim 40 above. Chandrasekaran teaches "wherein the database maintains a reference to at least one file associated with the first resource manager" (Col. 3, lines 12-26, Col. 4, lines 50-62, Col. 7, lines 15-29).

For claim 42, this claim is rejected on grounds corresponding to the argument give above for rejected claim 34 above. Chandrasekaran teaches "wherein associating at least one of the parts with the first resource manager comprises associating a file with the first resource manager, the file having information therein that indicates the association" (Col. 3, lines 12-26, Col. 4, lines 50-62, Col. 7, lines 15-29).

For claim 43, this claim is rejected on grounds corresponding to the argument give above for rejected claim 34 above. Chandrasekaran teaches "wherein separating a file system volume into a plurality of parts comprises collecting a plurality of sets of files, and wherein associating at least one of the parts with a first resource manager

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comprises associating files of a common type with the first resource manager”(Col. 1, lines 19-35, Col. 3, lines 12-26, Col. 4, lines 50-62, Col. 7, lines 15-29).

For claim 44, is rejected on grounds corresponding to the arguments given above for rejected claim 34 and is similarly rejected.

For claim 45, Chandrasekaran teaches “separating a file system volume into a plurality transactional resource managers that provide transactional services” (Col. 1, lines 19-35, Col. 3, lines 28-37); and “performing a function with respect to a selected resource manager, the resource managers being independent of one another such that the function is performed independently of any other resource manager” (Col. 1, lines 25-35, Col. 4, lines 50-62).

For claim 46, this claim is rejected on grounds corresponding to the argument give above for rejected claim 45 above. Chandrasekaran teaches “receiving a request to perform the function” (Col. 7, lines 1-23, Col. 9, lines 50-57).

For claim 47, this claim is rejected on grounds corresponding to the argument give above for rejected claim 46 above. Chandrasekaran teaches “wherein receiving the request comprises receiving an application programming interface call” (Col. 2, lines 10-21).

For claim 48, this claim is rejected on grounds corresponding to the argument give above for rejected claim 45 above. Chandrasekaran teaches "wherein the function corresponds to a backup operation of at least some of the files of a resource manager" (Col. 3, lines 12-35).

For claim 49, this claim is rejected on grounds corresponding to the argument give above for rejected claim 45 above. Chandrasekaran teaches "wherein the function corresponds to a restore operation of at least some of the files of a resource manager" (Col. 2, lines 48-67, Col. 3, lines 1-2).

For claim 50, this claim is rejected on grounds corresponding to the argument give above for rejected claim 45 above. Chandrasekaran teaches "wherein the function corresponds to a roll forward to a point in time operation" (Col. 3, lines 38-61).

For claim 51, this claim is rejected on grounds corresponding to the argument give above for rejected claim 45 above. Chandrasekaran teaches "wherein the function corresponds to a crash recovery operation" (Col. 2, lines 60-67).

For claim 52, this claim is rejected on grounds corresponding to the argument give above for rejected claim 45 above. Chandrasekaran teaches "wherein the function corresponds to a redo phase of a recovery operation" (Col. 4, lines 22-31).

For claim 53, this claim is rejected on grounds corresponding to the argument give above for rejected claim 52 above. Chandrasekaran teaches "performing the function at least one other time" (Col. 4, lines 22-31).

For claim 54, this claim is rejected on grounds corresponding to the argument give above for rejected claim 45 above. Chandrasekaran teaches "wherein the function corresponds to an undo phase of a recovery operation" (Col. 1, lines 35-52).

For claim 55, is rejected on grounds corresponding to the arguments given above for rejected claim 45 and is similarly rejected.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandrasekaran et al. (Patent No. 6,738,971) herein after "Chandrasekaran in view of Choy et al. (Pub No. 2003/0200467) hereinafter "Choy"

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For claim 38, this claim is rejected on grounds corresponding to the argument give above for rejected claim 37 above. Chandrasekaran does not explicitly teaches "a security model for the files of the first resource manager, in which the files within the first resource manager are at most as secure as an object representing the first resource manager".

However, Choy teaches "a security model for the files of the first resource manager, in which the files within the first resource manager are at most as secure as an object representing the first resource manager" (008, 0025-0028, 0042, 0044).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Chandrasekaran's teachings with Choy, and using a security model such as ACL which is well known in the art as a concept in computer security used to enforce privilege separation. It is a means of determining the appropriate access rights to a given object depending on certain aspects of the process that is making the request, principally the process's user identity. ACL can also be a table that tells a computer operating system which access rights each user has to a particular system object, such as a file directory or individual file. Each object has a security attribute that identifies its access control list. The list has an entry for each system user with access privileges.

For claim 39, this claim is rejected on grounds corresponding to the argument give above for rejected claim 38 above. Chandrasekaran does not explicitly ^{teach} wherein

the security model prevents setting an ACL to represent a greater degree of access control relative to a degree of access control of the object".

However, Choy teaches "wherein the security model prevents setting an ACL to represent a greater degree of access control relative to a degree of access control of the object"(008, 0025-0031, 0042, 0044, fig.2-11)

CONCLUSION

6. The following prior art cited on the PTO-892 form, not relied upon, is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUBUSOLA ONI whose telephone number is 571-272-2738. The examiner can normally be reached on 7.30-5.00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIM VO can be reached on 571-272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

OLUBUSOLA ONI
Examiner
Art Unit 2168



**TIM VO
PRIMARY EXAMINER**